

**IN THE CLAIMS**

Claims 1-22 cancelled

23. (Currently Amended) A method for heating a sample, said method comprising the steps of:

I. providing a heating apparatus ~~according to claim 1~~ and inserting the sample in the applicator,

II. generating electromagnetic radiation at a first output power level,

III. rotating the deflector for adjusting the coupling factor between the waveguide and the resonant cavity.

24. (Original) A method according to claim 23, wherein the sample has a first temperature  $T_1$ , the method further comprising the steps of:

heating the sample to obtain a second temperature  $T_2 > T_1$ ,

rotating the deflector for adjusting the coupling factor between the waveguide and the resonant cavity in response to the variation in the dielectric properties  $\epsilon_{\text{sample}}$  of the sample.

25. (Original) A method according to claim 23, Wherein step III comprises the steps of:

IV. performing the following steps one or more times:

- positioning the deflector in a first position and measuring a first power of electromagnetic radiation reflected from the waveguide applicator, the reflected radiation corresponding to said first position of the deflector,

- rotating the deflector to a second position that is different from the first position and measuring a second power of electromagnetic radiation reflected from the waveguide applicator, the reflected radiation corresponding to said second position of the deflector, and

V. determining a preferred position of the deflector based on the amount of power reflected from the waveguide applicator in at least the first and second position.

26. (Original) A method according to claim 25, further comprising the steps of:

VI. providing a first storing means,

VII. storing information relating to the first position in the storing means and storing the measured first power in relation thereto, and

VIII. storing information relating to the second position in the storing means and storing the measured second power in relation thereto.

27. (Original) A method according to claim 26, wherein step V comprises processing the stored measured powers for determining the preferred position of the deflector corresponding to a local or absolute minimum in the measured power or to a predetermined ratio of the measured power to the first output power level.

28. (Original) A method according to claim 25, further comprising the steps of positioning the deflector in the preferred position.

29. (Original) A method according to claim 25, further comprising the steps of positioning the deflector in the preferred position and generating electromagnetic radiation at a second output power level which is larger than the first output power level.

30. (Original) A method according to claim 26, further comprising the steps of determining a measure of the relative permittivity of the sample by comparing the stored measured powers with corresponding stored measured powers from a different sample.

31. (Original) A method according to claim 26, further comprising the steps of determining an indication of the chemical composition of the sample by comparing the stored measured powers with corresponding stored measured powers from a sample of known chemical composition.

32. (Original) A method according to claim 31, wherein the sample comprises at least one reactant for performing a chemical reaction, the method further comprising the steps of:

performing the chemical reaction with the at least one reactant, and

determining a degree of reaction for the chemical reaction using the indication of the chemical composition of the sample.